

The present invention relates to an improved tray construction and, in particular, to an improved packaging and displaying tray and holder.

Numerous tray constructions have been disclosed in the prior art. In particular, a number of design patents have been previously acquired for sewing trays and holders of various kinds, including United States Design Patent Nos. D202,580; D214,363; D218,514; D219,263; D234,654; and D235,498. Further, the prior art also includes article containers such as those disclosed in United States Patent Nos. 2,175,753; 3,127,225; and 3,872,996.

None of the prior art patents referred to above provide an improved tray construction for holding bars of soap, vials, or similar products therein, the tray portion employing projecting means on the side walls of the container for retaining the product or products in position in the tray, while providing a holder which can be subsequently used by a purchaser as a holder for the products purchased. For example, the tray can be used as a conventional soap dish in the case of bars of soap sold in the improved tray.

According to the present invention, there is provided an improved tray construction comprising a tray portion, the tray portion having a bottom wall, a first pair of opposed spaced-apart rigid walls extending away from the bottom wall, and a second pair of spaced-apart walls, at least one of the second pair of spaced-apart walls having inwardly directed projecting means situated thereon. Adjacent ends of the first pair of rigid walls and an adjacent side of the bottom wall are interconnected by a continuous parallel outer side surface, the first and second pair of walls and the bottom wall defining a product receiving compartment means, a lower surface of the projecting means adapted to retain at least one solid product contained in this product



receiving compartment means of the tray, and at least one of the second pair of spaced-apart walls being pivotally secured to the container, the at least one pivotally secured wall adapted to be pivoted between an open position for receiving at least one solid product in the product receiving compartment means of the tray and a closed position in which the at least one projecting means retains the at least one solid product within the receiving compartment means of the tray.

In drawings which illustrate a preferred embodiment
 10 of the present invention:-

FIGURE 1 is a perspective view of one embodiment of the improved tray construction according to the present invention;

FIGURE 2 is an enlarged cross-sectional view of the embodiment of Figure 1, taken along the line 2-2 of Figure 1, with the pivotable wall being in a somewhat more closed position than is shown in Figure 1;

FIGURE 3 is an enlarged cross-sectional view of the embodiment of Figure 1, taken along the line 3-3 of Figure 1, illustrating a bar of soap contained in the holder portion of the tray portion, and with the pivotable wall being shown in a
 20 somewhat more closed position than is shown in Figure 1;

FIGURE 4 is an enlarged plan view of the locking means for the pivotable wall, taken along the line 4-4 of Figure 2;

FIGURE 5 is a perspective view of the embodiment of the tray portion according to Figure 1, showing the tray portion being inserted into a plastic sleeve;

FIGURE 6 is a cross-sectional view of the improved tray, taken along the line 6-6 of Figure 5; and

FIGURE 7 is an enlarged vertical section of a portion
 30 of the tray showing engagement of a bar of soap in the holder by projecting means situated on the pivotable side wall of the tray.

As best seen in Figure 1, the improved tray is indicated generally by reference numeral 10, the tray being of vacuum formed construction and made preferably from polystyrene, or a similar material. The tray includes a pair of end walls 12 and 14 and an intermediate wall 16 situated midway therebetween. Each end wall includes an outer surface 18 and an inner surface 20 spaced inwardly from the outer surface so as to form an open space therebetween, upper edges of the inner and outer surfaces being interconnected by top surfaces 22. The intermediate wall is formed from spaced-apart outer surfaces 24, defining an open space therebetween, and a top surface 26, the top surface 26 and the top surfaces 22 lying in a common plane. The inner and outer surfaces 18 and 20 of the end walls 12 and 14 and the outer surfaces 24 of the intermediate wall 16 are parallel to each other and extend at right angles to the common plane including the top surfaces 22 and 26. Further, the inner and outer surfaces of the end walls 12 and 14 and the outer surfaces of the intermediate wall 16 include longitudinal grooves 56 therein which extend the height of the respective walls, the grooves 56 being slight depressions of convex configuration in plan view.

Lower edges of the inner surfaces 20 of the end walls 12 and 14 merge into respective bottom wall sections 28, each bottom wall section, in turn, meeting a lower edge of a respective outer surface 24 of the intermediate wall 16. Each bottom wall section 28 and the adjacent surfaces of the end wall and intermediate wall define a respective product receiving compartment of the tray. The bottom wall sections 28 are contoured to the shape of the product or products received in the compartment. For example, in the embodiment shown in Figures 1 to 7, the bottom walls are contoured to the configuration of bars of soap which are received therein in the manner shown in Figures 3 and 7. However, the configuration of the bottom walls can

include a plurality of partitions so as to receive a plurality of vials or similar items to be contained in the tray.

Ends of the inner and outer surfaces of the end walls 12 and 14 and ends of the outer surfaces 24 of the intermediate wall 16 merge into longitudinally extending, continuous side surfaces 30 and 32, with upper edges of the side surfaces 30 and 32 intermediate the inner surfaces 20 of the end walls and the outer surfaces 24 of the intermediate wall defining upper edges 34 of the bottom wall sections 28. A lower edge of each
 10 of the side surfaces 30 and 32 have a lower edge of a respective side wall 36 and 38 pivotally attached thereto. The pivotally secured side walls 36 and 38 are pivotable between an open position as shown with respect to side walls 36 in Figures 1 to 3, and a closed position, as shown with respect to side walls 38 in these Figures. Locking means are provided in order to retain the side walls 36 and 38 in their closed positions. In particular, each pivotally secured side wall 36 and 38 has inwardly directed engaging means 40 situated adjacent an upper edge thereof, each of the engaging means adapted to releasably
 20 engage cooperating receiving means 42 located in the side surfaces of the adjacent end wall or intermediate wall of the tray.

The engaging means 40 comprises a portion of the pivotally secured side wall which extends inwardly from the side wall and part way along the height of the side wall from the upper edge thereof. As best seen in Figure 4, the engaging means is integral with the side wall and includes a pair of diverging wall sections 44, outer ends of the diverging wall sections merging into converging wall sections 46, with outer ends of the converging wall sections 46 terminating in an end
 30 flat wall portion 48. The cooperating receiving means 42 in the side surface of the end wall or intermediate wall comprises a depression situated in the side surface, the depression being

in alignment with the engaging means and of a configuration so as to releasably retain the engaging means 40 therein. Accordingly, the receiving means 42 includes a mouth portion 50 formed by a pair of spaced-apart corners where side walls 52 of the receiving means, which diverge away from the mouth portion 50, meet the side surface. Inner ends of the diverging side walls 52 merge into an inner wall portion 54. Outer surfaces of the converging walls 46 of the engaging means 40 provide camming surfaces which slide over the projections or corners at the mouth portion 50 of the receiving means, the converging walls 46 being urged inwardly by the projections or corners as the engaging means snap into engagement with the receiving means. Further, the diverging wall sections 44 of the engaging means engage the outer portions of the diverging side walls 52 of the receiving means for releasably retaining engaging means 40 in contact with the receiving means 42.

Each of the pivotally secured side walls 36 and 38 include projecting means 60, there being two projecting means on each side wall, each projecting means being in alignment with a respective portion of the bottom wall situated between the end walls and the intermediate wall. Each projecting means 60 includes a top surface 62, an inner surface 64, a lower surface 66 extending outwardly from the inner surface 64 and merging with the side wall, and a pair of end surfaces 68. The lower surface 66 is contoured to the configuration of the product, such as a bar of soap S contained in the holder. As best seen in phantom in Figure 7, the lower surface 66 of the projecting means 60 lies closely adjacent the upper surface of the soap S contained in the tray when the pivotable wall 36 is in the closed position. In this manner, the projecting means 60 prevent movement of the product such as the bar of soap within the tray when the pivotally secured side walls are in their closed posit-

ions, as shown in Figures 5 and 6.

The tray 10 also includes reinforcing ribs 70 adjacent the ends of the inner surfaces 20 of the end walls 12 and 14 and adjacent the ends of the outer surfaces 24 of the intermediate wall 16. Lower edges of the reinforcing ribs 70 are integral with the upper edges 34 of the bottom wall sections 28 and thereby add rigidity to the surfaces of the intermediate and end walls.

When utilizing the improved tray as a packaging for soap or the like, the same may be wrapped in a clear plastic wrapping or may be inserted in a plastic sleeve, such as shown in Figure 5. In the latter case, the product to be contained in the tray is first placed in the holding sections of the tray, the pivotally secured side walls are then snapped into their closed positions, and the tray 10 is then slid into one of the open ends of the plastic sleeve 72, as indicated by arrow 74 in Figure 5. To facilitate the insertion of the products in the tray, one or both of the pivotally secured side walls 36 and 38 is placed in the open position, such as shown in Figure 1.

After purchase by the consumer, the tray is removed from the plastic sleeve 72 or plastic wrapping. As a result of its construction, the improved tray 10 can be utilized as a holder for the product contained therein, such as a soap dish in the case of soap contained in the tray. In such an instance, at least one of the pivotally secured side walls is left in its open position, or is removed from the lower edge of the tray, as desired by the user. In such a case, the tray can function as an efficient soap holder, thereby avoiding the necessity of providing a separate soap holder, an advantage when, for example, camping, where a conventional soap holder would not be readily available.

As a further advantage, the improved tray can be used by the purchaser, if desired, to store the product purchased in the tray, the rigidity of the tray being such as to withstand crushing loads of the magnitude likely to be encountered in a suitcase, a drawer, or the like.

While the preferred embodiment of the invention described above includes two product receiving compartments, it is within the scope of the present invention to have only one product receiving compartment, thus omitting the intermediate wall in the construction of the tray. Further, the tray can be made of single wall plastic or from pulp rather than polystyrene.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An improved tray construction comprising: a tray portion, the tray portion having a bottom wall, a first pair of non-movable opposed spaced-apart rigid end walls fixedly secured to said bottom wall extending away from said bottom wall, and a second pair of opposed spaced-apart rigid side walls extending away from said bottom wall, the second pair of spaced-apart walls having inwardly directed projecting means situated thereon, and an adjacent side of the bottom wall being interconnected by a continuous depending outer skirt secured in fixed relation to said bottom wall, the first and second pair of walls defining an enclosure and together with the bottom wall defining a product receiving compartment means, a lower surface of the projecting means adapted to retain at least one solid product contained in the product receiving compartment means of the tray, and at least one of the second pair of spaced-apart walls being pivotally connected to the outer skirt adjacent said bottom wall, said at least one of the second pair of walls adapted to be pivoted between an open position for receiving at least one solid product in the product receiving compartment means of the tray and a closed position in which the at least one projecting means retains the at least one solid product within the receiving compartment means of the tray, and wherein said pivotally connected wall includes locking means thereon for releasably retaining said pivotally secured wall in its closed position, said locking means comprising at least one engaging means extending inwardly from an inner surface thereof and cooperating receiving means in said continuous skirt, the receiving means adapted to releasably retain the engaging means therein.

2. An improved tray according to claim 1, wherein a bottom wall of the container is contoured to a shape of the at least one solid product to be received in the tray.

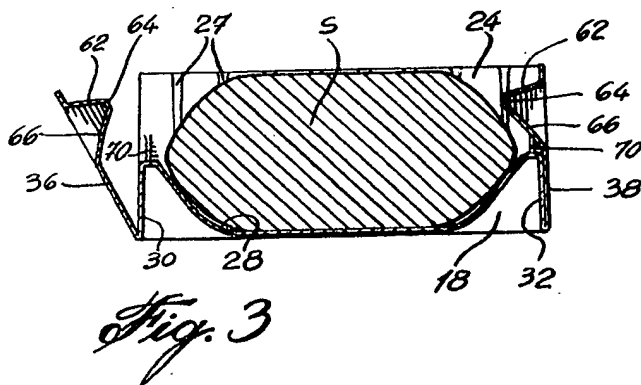
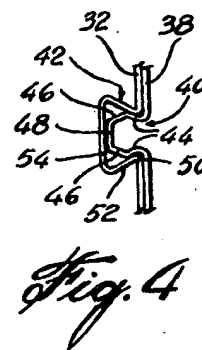
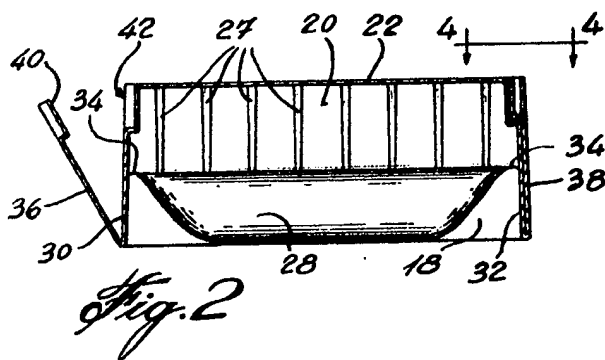
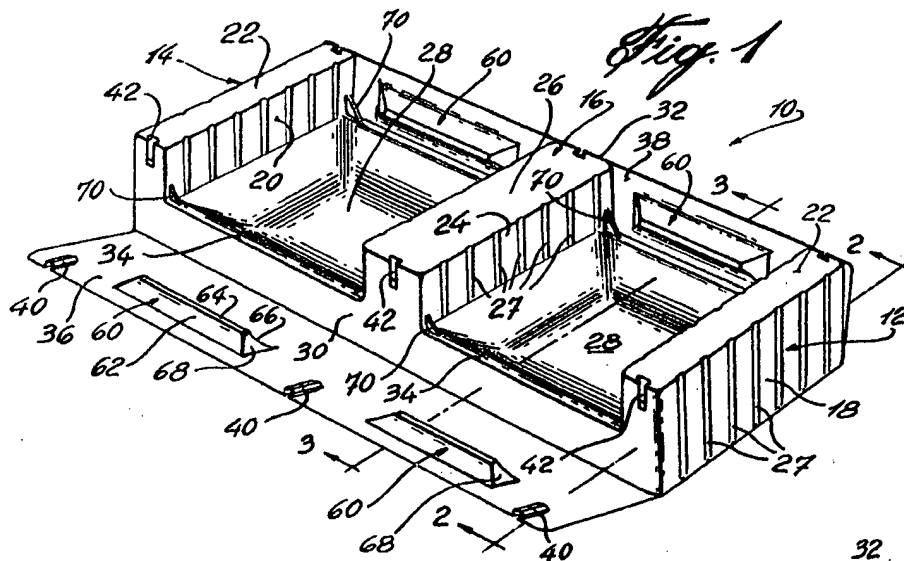
3. An improved tray according to claim 2, wherein each of the second pair of spaced-apart walls have inwardly directed projecting means, lower surfaces of the projecting means being contoured so as to hold the at least one solid product in position within the tray.
4. An improved tray according to claim 3, wherein each of the second pair of spaced-apart walls is pivotally secured to a lower edge of the adjacent continuous outer side surface.
5. An improved tray according to claim 1, wherein the tray is vacuum formed from polystyrene.
6. An improved tray according to claim 1, wherein the tray is single wall plastic.
7. An improved tray according to claim 1, wherein the tray is pulp.
8. An improved tray according to claim 2, wherein each of the walls of the first pair of opposed spaced-apart rigid walls has an outer surface and an inner surface, upper edges of which are interconnected by a top surface, the inner and outer surfaces and the top surface merging with the continuous outer side surfaces so as to define an open space within an interior of each of the spaced-apart rigid walls.
9. An improved tray according to claim 8, wherein the inner and outer surfaces of the walls of the first pair of opposed spaced-apart rigid walls have a plurality of spaced-apart small parallel depressions extending a height thereof.
10. An improved tray comprising a tray portion including a bottom wall having a pair of non-movable spaced-apart rigid end walls fixedly secured to said bottom wall and a non-movable rigid intermediate wall situated therebetween and fixedly secured to said bottom wall, each wall having outer

surfaces and a top surface extending therebetween, the top surfaces of the end walls and the intermediate wall lying in a common plane, the end walls and intermediate wall being interconnected by a pair of spaced-apart flat, parallel side surfaces; a bottom wall section extends between one outer surface of the intermediate wall and an adjacent surface of the end wall, each bottom wall section and the adjacent wall surfaces defining a product receiving compartment; a second pair of spaced-apart walls having upper edges lying in a common plane with the top surfaces of the end walls and the intermediate wall, the second pair of spaced-apart walls having a pair of spaced-apart projecting means thereon with one projecting means extending inwardly into each of the product receiving compartments; and at least one of the second pair of spaced-apart walls being pivotally secured to a lower edge of one of the continuous side surfaces connecting the end walls and the intermediate wall, whereby the pivotally secured wall is pivotable between an open position for placing at least one solid product in the tray and a closed position wherein the projecting means retains the at least one solid product in the product compartment of the tray, said pivotally secured wall includes releasable retaining means for releasably retaining the pivotally secured wall in its closed position, said said non-movable rigid intermediate wall and said non-movable rigid end walls thereby assisting together with said releasable retaining means in retaining one movable wall in fixed relation to said bottom wall while the other of said movable walls is pivoted to said open position.

11. An improved tray according to claim 10, wherein each of the second pair of walls is pivotally secured to a respective continuous side surface of the tray.

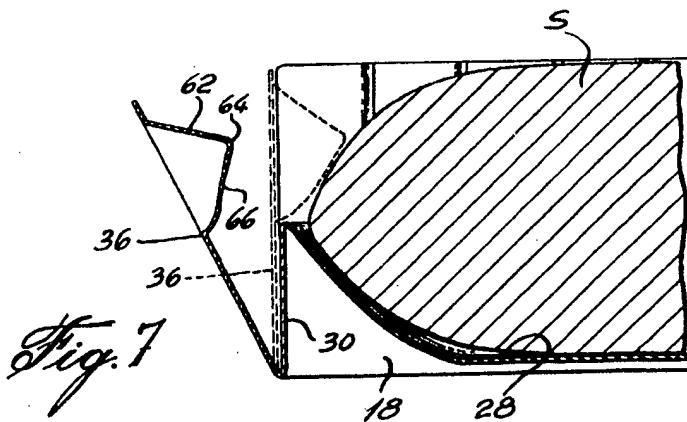
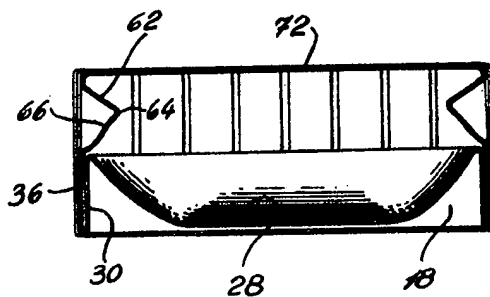
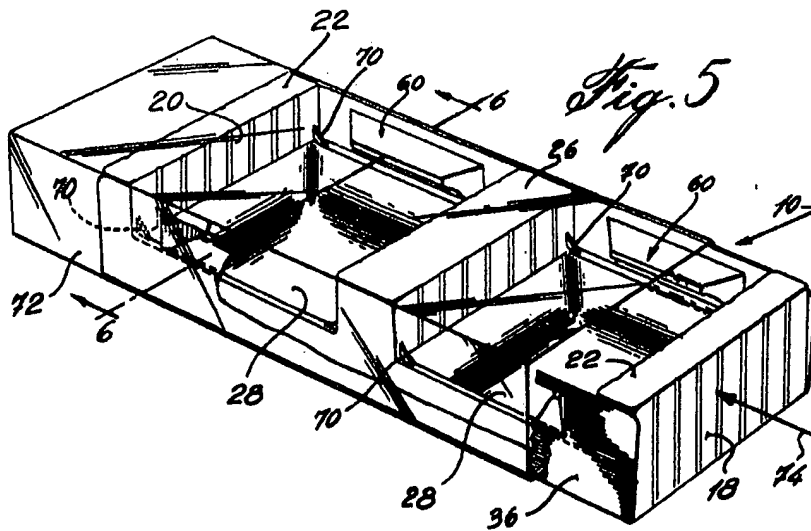
12. An improved tray construction as defined in claim 1, wherein said compartment means has a product supporting surface, the peripheral edges of which have concave surfaces extending upwardly to blend into said fixed rigid end walls.





PATENT AGENTS

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